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Mr. E. J. Cooper read the following paper on the Determination of Differences of Longitude by means of Shooting Stars.

"It is not my intention, upon the present occasion, to make any remarks on the various theories that have been published on the subject of what are commonly called shooting stars; I desire merely to lay before the Academy the result of a rough experiment which I recently instituted, to obtain by them differences of longitude between two stations.

"Artificial signals have been frequently adopted for this purpose, and by none with more perfect success than by my excellent friend, Dr. Robinson, of Armagh. The Academy knows that, to conclude the difference of longitude between Dunsink and Armagh, he obtained rockets from the Ordnance, which were fired on Slieve Gullion, and the instant of their extinction was noted at the two Observatories. The result was within $0^s{\cdot}03$ of that given by the mean of fifteen chronometers belonging to Mr. Dent, the celebrated maker in London. In the year 1841 the difference of longitude was sought in a similar way, between the Observatories of Armagh and Markree. The rockets were fired on Culkagh, but, unfortunately, only seven were observed at both places. The result, however, only differed 1^s from that deduced, by the kindness of Captain Larcom, from the Ordnance Survey.

"It can scarcely be necessary to remind the Academy that these artificial projectiles are not always available for the purpose, inasmuch as the height to which they can be made to rise is limited, and there is also a difficulty in securing their sudden extinction. Differences of longitude between places far separated from one another on the earth's surface, cannot, therefore, be decided by their means.

"I believe that the idea of making shooting stars subservient to this end is by no means new; but I am not aware of its having been carried into practice. They have been observed at two stations to ascertain their *distance* from the earth through parallax; but I fancy that there has no experiment been made similar to that which I am about to submit to your notice.

" Previous to the periodical display of these singular phenomena in August last, I communicated with Mr. Graham, my first assistant at the Markree Observatory, suggesting that we should make the trial of obtaining the difference of longitude between Markree Observatory and the Obelisk at Killiney, by means of shooting stars. I fixed on the evenings of the 10th, 11th, and 12th of August, as those on which it was most probable that the greatest number of these phenomena would be seen; and the room and gallery of the Obelisk were most obligingly placed at my disposal by Mr. Warren.

" The Markree mean times were, of course, easily determined. Those at Killiney were deduced from transits, observed with a beautiful little universal instrument by MM. Ertels, of Munich, and a sidereal chronometer by the late Mr. Sharp, of this city. On the 10th and 12th of August, the shooting stars were noted at both stations: on the 11th only at Markree, the night being overcast with rain at Killiney. I have the honour to present the lists of those seen at Markree and Killiney on the 10th and 12th.

" The first column of the Markree lists gives the number; the second, the mean time at station; the third and fourth, the apparent place in the heavens, wherein the phenomena firstly and lastly were observed; the fifth, their estimated duration; the sixth, their magnitude compared with the fixed stars; and the last, general remarks thereon.

" The first column of the Killiney lists gives the number; and the second, the mean time at station; but the third, containing the supposed mean time at Markree, corresponding to the mean time at Killiney, by estimation of the difference of longitude, was introduced by me for the purpose of facilitating the identification of the objects seen at both the stations. This was necessarily a rough approximation, obtained as follows:

"The longitude of Dunsink, according to the Nautical Almanac, $= 25^{m}\ 22^{s}$ W. of Greenwich; and that of Markree Observatory, $= 33^{m}\ 48^{s}{\cdot}4$ W. Thus the difference of longitude between Dunsink and Markree $= 8^{m}\ 26^{s}{\cdot}4$. Applying a scale to the Ordnance Sketch Map of the county of Dublin, the Obelisk at Killiney appeared to be nearly 9·55 statute miles to the eastward of Dunsink; and then, assuming a degree of longitude in latitude 53° 15′ to equal about 41·45 statute miles, a simple rule of three gave the difference of longitude in time between Dunsink and Killiney $= 55^{s}{\cdot}3$. This being added to $8^{m}\ 26^{s}{\cdot}4$, the difference between Dunsink and Markree, produced the result,—difference of longitude between Markree Observatory and the Obelisk at Killiney $= 9^{m}\ 21^{s}{\cdot}7$. With this result I estimated the times at Markree corresponding to the times at Killiney.

"Upon my sending my observations on the 10th and 12th to Mr. Graham, he identified my Nos. 30 and 38 with his Nos. 13 and 71 on the night of the 10th. These two shooting stars gave difference of longitude respectively $= 9^{m}\ 20^{s}{\cdot}9$ and $9^{m}\ 19^{s}{\cdot}9$; the mean, $9^{m}\ 20^{s}{\cdot}4$, differing from the longitude assumed by me in the amount $1^{s}{\cdot}3$. But I subsequently discovered that the shooting stars, No. 8 Markree, and No. 27 Killiney, on the night of the 12th, were one and the same, giving, for difference of longitude, $9^{m}\ 23^{s}{\cdot}4$. The mean of the three is $9^{m}\ 21^{s}{\cdot}4$, which differs only $0^{s}{\cdot}3$ from that which I had estimated.

"That the result is in reality as satisfactory as it appears to be, I cannot assert. Fractions of seconds in the observations could scarcely have been attended to under the circumstances, and therefore were neglected; those appearing in the lists, arising from the application of the corrections for clock at

Markree, and sidereal chronometer at Killiney. I also neglected the difference of longitude between the Obelisk and transit instrument. Thus, a very accurate result could scarcely be expected from but three comparisons.

" With reference to the two phenomena of August 10th, I have to remark, that if the lines of apparent direction of No. 38 Killiney, and No. 71 Markree, be produced to the horizon, the azimuthal difference would amount to 120° ; and in the case of No. 30 Killiney, and No. 13 Markree, the difference would be still greater. This observation does not apply to No. 27 Killiney, and No. 8 Markree, on the night of the 12th. Here the parallax was small, and it seems almost certain that the commencement of visible trajectory was observed at Markree, and the end at Killiney. The two shooting stars of the 10th must have been much nearer to the earth than that of the 12th. Supposing the parallax to be 120°, the distance of the object from each station would be to the distance of the stations from one another as 1 to $\sqrt{3}$. The base in the experiment before us = 98 miles. It is somewhat singular that No. 29 Killiney, and No. 10 Markree, on the night of the 12th, and described at both stations to be of extreme brilliancy, and with magnificent train, should have been seen within 10^s of each other in the same apparent line on the map, but moving in opposite directions."

Shooting Stars observed at Killiney, August 10, 1847.

No.	M. T. Killiney.	Calculated M. T. Markree.	From.	To.	Dur.	Mag.	Remarks.
	h. m. s.	h. m. s.					
1	9 27 0.5	9 17 38.8	α Urs. Min.	α Urs. Maj.	0.5	2	No train.
2	9 30 0.0	9 20 38.3	γ Andromed.	α Arietis.			
3	9 34 59.2	9 25 37.5	Do.	β Andromed.	. .	2	Train.
4	9 38 58.5	9 29 36.8	y Piscium.	α Pegasi.			
5	9 43 34.8	9 34 13.1	α Cephei.	α Urs. Min.	. .	1	Train.
6	9 44 14.7	9 34 53.0	Do.	Do.	. .	1	Train.
7	9 44 19.7	9 34 58.0	κ Draconis.	δ Urs. Maj.	. .	1	Train.
8	9 47 24.2	9 38 2.5	α Urs. Min.	η Urs. Maj.	0.5	4	No train.
9	9 48 48.9	9 39 27.2	β Trianguli.	α Piscium.	. .	. .	Train.
10	9 49 18.8	9 39 57.1	A little north of preceding,	. . . . . .	1.0	3	No train.
11	9 56 12.7	9 46 51.0	α Cassiop.	Over β Androm.	1.0	2	No train.
12	9 57 47.5	9 48 25.8	δ Androm.	σ Androm.			
13	9 58 47.3	9 49 25.6	α Aurigæ.	π Aurigæ.			
14	9 59 57.1	9 50 35.4	α Urs. Min.	δ Camelop.			
15	10 0 37.0	9 51 15.3	δ Camelop.	α Urs. Maj.	. .	1	Train.
16	10 5 1.3	9 55 39.6	λ Draconis.	ε Urs. Maj.	1.0	3	Slight train.
17	10 6 13.1	9 56 51.4	α Urs. Maj.	Parallel to tail of Draco.	0.5	5	No train.
18	10 7 45.8	9 58 24.1	γ Urs. Maj.	α Draconis.	1.0	1	No train.
19	10 8 30.7	9 59 19.0	α Draconis.	Thro' α Urs. Maj.	10.0	1	Train very long.
20	10 11 15.2	10 1 53.5	γ Androm.	β Androm.	0.7	3	No train.
21	10 12 59.9	10 3 38.2	β Androm.	γ Piscium.	. .	4	
22	10 13 59.8	10 4 38.1	Do.	Do.			
23	10 14 19.7	10 4 58.0	β Piscium	Saturn.			
24	10 16 16.4	10 6 54.7	α Urs. Min.	Vertically down.			
25	10 18 36.0	10 9 14.3	Delphinus.	Do.			
26	10 19 13.9	10 9 51.2	η Urs. Maj.	α Can. Ven.			
27	10 19 33.9	10 10 11.2	43 Camelop.	χ Draconis.	. .	. .	Train very good.
28	10 24 53.0	10 15 31.3	Neb. Androm.	δ Androm.	0.5	3	No train.
29	10 26 2.8	10 16 41.1	c Lacertæ.	α Lyræ.	0.5	3	No train.
30	10 28 32.4	10 19 10.7	Half way between Pole & α Urs. Maj.	α Urs. Maj.	1.0	4	No train.
31	10 33 11.6	10 23 49.9	β Trianguli.	δ Trianguli.	0.3	4	No train.
32	12 4 20.7	11 54 59.0	α Arietis.	Mars.	0.5	4	No train.
33	12 5 45.4	11 56 23.7	β Trianguli.	η Piscium.	0.5	3	No train.
34	12 15 43.8	12 6 22.1	α Urs. Min.	β Urs. Min.			
35	12 19 33.2	12 10 11.5	Do.	β Bootis.			
36	12 20 43.0	12 11 21.3	γ Androm.	α Urs. Maj.	0.5	3	No train.
37	12 22 42.6	12 13 20.9	δ Cassiop.	β Ceti.	1.0	1	No train.
38	12 26 12.1	12 16 50.4	ε Urs. Maj.	α Can. Ven.			
39	12 27 31.9	12 18 10.2	α Persei.	α Aurigæ.			
40	12 27 51.8	12 18 30.1	α Urs. Min.	λ Draconis.			
41	12 30 1.4	12 20 39.7	α Arietis.	Mars.			
42	12 30 41.3	12 21 19.6	γ Androm.	Thro' Pleiades.			
43	12 31 11.3	12 21 49.6	Pleiades.	Mars.			
44	12 31 51.1	12 22 29.4	Parallel to & N. of α Aurigæ & β Aurigæ.	. . . . . .	1.0	1	No train.
45	12 34 5.8	12 24 44.1	A Urs. Maj.	λ Urs. Maj.	. .	. .	No train.
46	12 42 34.4	12 33 12.7	A Urs. Maj.	Below β Urs. Maj.	1.0	2	Slight train.

Shooting Stars observed at Markree, August 10, 1847.

No.	Calculated M. T. Markree.			From.	To.	Dur.	Mag.	Remarks.
	h.	m.	s.			s.		
1	9	10	9.0	α Urs. Min.	γ Orionis.	0.4	2	No train.
2	9	13	19.1	ι Draconis.	α Bootis.	0.5	5	No train.
3	9	15	25.1	α Cephei.	α Lyræ.	0.5	1	No train.
4	9	18	50.1	α Cygni.	Downwards.	0.5	1	No train.
5	9	20	7.1	β Urs. Maj.	η Bootis.	0.3	2	No train.
6	9	23	21.1	δ Cassiop.	α Persei.	0.5	4	
7	9	24	35.1	γ Cassiop.	α Cephei.	0.4	3	
8	9	27	20.1	ι Cassiop.	Thro' α Urs. Min.	1.0	1	No train.
9	9	35	58.2	ζ Cassiop.	Upward.	0.5	2	
10	10	13	10.5	γ Cor. Bor.	Southward.	0.5	1	No train.
11	10	14	5.5	α and β Cephei.	Horizontal.	0.2	5	
12	10	16	20.5	α Urs. Min.	Across β Urs. Maj.	0.5	2	
13	10	19	11.5	α Androm.	Downward.	0.4	3	
14	10	20	50.5	Across α Urs. Min. and γ Urs. Min.	. . . . . .	0.1	1	Fine train.
15	10	23	0.5	Pretty low in W. near α Bootis.	. . . . . .	0.3	2	No train.
16	10	24	6.5	Across β Cephei.	Horizontal.	0.3	4	
17	10	27	35.5	Across Ursa Major.	. . . . . .	2.5	. .	Train lasted 3 or 4 s. bright as Jupiter
18	10	28	25.6	Above Auriga.	. . . . . .	0.5	2	No train.
19	10	29	0.6	Do.	. . . . . .	0.7	1	No train.
20	10	33	3.6	Below φ Urs. Min.	γ Urs. Maj.	0.5	2	
21	10	34	5.6	Near α Bootis.	. . . . . .	0.3	3	
22	10	34	55.6	Caught a glimpse of it in W.	. . . . . .	0.7	2	
23	10	38	14.6	γ Urs. Maj.	α Can. Ven.	0.4	3	
24	10	40	14.6	Across α Lyræ.	. . . . . .	0.6	2	
25	10	41	11.6	ζ Urs. Min.	η Draconis.	0.4	2	
26	10	42	44.6	ι Draconis.	Horizontal.	0.4	3	No train.
27	10	46	7.6	ε Cassiop.	α Urs. Min.	0.2	2	Fine train.
28	10	51	2.7	Below α Urs. Min.	γ Urs. Maj.	0.3	4	No train.
29	10	51	3.7	Do.	Do.	0.5	1	
30	10	51	35.7	Do.	Do.	0.6	2	
31	10	52	5.7	Do.	Do.	0.4	3	
32	10	53	0.7	Very little above α Lyræ.	Southwards.	1.0	2	
33	10	53	30.7	Farther above do.	α Urs. Min.	0.2	2	
34	10	55	55.7	In Perseus.	. . . . . .	0.2	4	
35	10	56	59.7	η Urs. Min.	Southward.	0.3	5	
36	11	2	40.7	χ Draconis.	Downward.	0.4	3	
37	11	3	40.7	Along in North,	. . . . . .	0.2	3	
38	11	5	6.7	α Urs. Min.	α Lyræ.	0.3	4	
39	11	7	25.7	Across α Urs. Maj.	. . . . . .	0.2	3	No train.
40	11	8	20.7	α Urs. Min. across γ Urs. Maj.	. . . . . .	0.7	1	Train.
41	11	8	40.7	In head of Urs. Maj.	. . . . . .	0.4	2	No train.
42	11	10	53.8	Above α Urs. Min.	Horizontal.	0.2	5	
43	11	12	33.8	Do.	Do.	0.2	3	
44	11	12	47.8	Below α Urs. Min.	δ Urs. Maj.	0.2	4	

Shooting Stars observed at Markree, August 10, 1847.

No.	Calculated M. T. Markree.	From.	To.	Dur.	Mag.	Remarks.
	h. m. s.			s.		
45	11 13 51.8	θ Bootis.	Southward.	0.3	3	No train.
46	11 15 0.8	Do.	Do.	0.5	1	Train.
47	11 15 25.8	Across Cassiopeiæ.	. . . .	0.5	3	Train.
48	11 16 54.8	α Urs. Maj. across γ Urs. Maj.	. . . .	0.5	2	No train.
49	11 17 52.8	θ Bootis.	γ Urs. Maj.	0.2	3	
50	11 18 25.8	Above α Urs. Min.	Horizontal.	0.3	3	
51	11 18 36.8	θ Urs. Maj.	γ Urs. Maj.	0.7	2	
52	11 19 26.8	Above α Urs. Min.	Horizontal.	0.2	5	
53	11 20 10.8	ε Cassiop.	α Urs. Min.	0.2	4	
54	11 21 53.8	Above θ Urs. Maj.	α Bootis.	0.2	2	
55	11 21 57.8	Between ε Urs. Maj. and α Bootis.	. . . .	0.2	2	
56	11 23 43.8	Across θ Bootis.	Southward.	0.2	3	
57	11 25 33.8	ε Draconis.	Southward.	1.0	4	No train.
58	11 43 42.0	Π Urs. Maj.	ψ Urs. Maj.	0.5	2	No train. (I cannot make out letter.)
59	11 43 55.0	Below β Urs. Maj.	χ Urs. Maj.	0.2	4	
60	11 44 41.0	Below α Urs. Min.	. . . .	0.2	4	No train.
61	11 47 8.0	Do.	. . . .	0.2	3	Train.
62	11 48 30.1	γ Cephei.	χ Cephei.	0.4	2	Train.
63	11 53 6.1	Above α Urs. Min.	Horizontal.	0.5	3	No train.
64	11 53 36.1	Above α Bootis.	β Cephei.	0.7	. .	No train, bright as Jupiter.
65	11 55 46.1	In zenith. Caught a glimpse.	. . . .	0.2	2	No train.
66	11 59 11.1	γ Cassiop.	β Cassiop.	0.2	2	
67	11 59 52.1	Below α Urs. Min.	. . . .	0.4	1	No train.
68	12 0 26.1	α Aurigæ.	Downward.	0.4	2	
69	12 1 31.1	Above α Urs. Min.	Π Draconis.	0.4	3	(Cannot make out letter.)
70	12 11 51.2	Thro' α Urs. Min.	Downward.	0.4	2	
71	12 16 52.2	α Urs. Min.	Auriga.	0.3	3	
72	12 18 50.2	Thro' χ Draconis.	ε Urs. Maj.	0.3	3	
73	12 23 0.2	ρ Urs. Maj.	β Urs. Maj.	0.5	1	No train.
74	12 24 36.2	η Urs. Maj.	Southward.	0.2	2	Caught a glimpse.
75	12 32 1.3	A little North of α Aurigæ, parallel to the line joining α and β Aurigæ.	. . . .	0.3	2	No train.
76	12 35 27.3	β Cassiop.	α Cephei.	0.5	. .	No train, bright as Jupiter.
77	13 2 31.4	Below α Urs. Min.	. . . .	0.5	1	No train.
78	13 6 29.4	Thro' Camelop.	Downward.	0.2	3	
79	13 8 32.4	ζ Urs. Maj.	ρ Urs. Maj.	0.2	3	
80	13 11 21.5	Thro' tail of Draco.	Downward.	1.0	4	
81	13 12 56.5	Thro' Camelop.	β Urs. Min.	1.0	4	No train.
83	13 18 37.5	γ Urs. Min.	Southward.	0.4	2	No train.

Shooting Stars observed at Killiney, August 12, 1847.

No.	M.T. Killiney.	Calculated M.T. Markree	From.	To.	Dur.	Mag.	Remarks.
	h. m. s.	h. m. s.					
1	9 35 37.0	9 26 15.3	35 Camelop.	β Lyræ.	1.0	3	Slight train.
2	9 38 36.5	9 29 14.8	Under α Urs. Min.	Camelop.	2.0	1	Long train.
3	9 41 59.9	9 32 38.2	β Cassiop.	β Cygni.	3.0	1	Magnificent train
4	9 43 45.6	9 34 23.9	α Ceti.	Thro' Mars.	0.5	3	No train.
5	9 50 59.5	9 41 37.8	In Ursa Minor.				
6	9 54 28.9	9 45 7.2	Thro' Aries.				
7	9 58 3.3	9 48 41.6	y Andromed.	α Andromed.	0.5	3	No train.
8	9 59 29.1	9 50 7.4	γ Andromed.	γ Cephei.	0.5	3	No train.
9	10 0 56.8	9 51 35.1	γ Andromed.	β Persei.			
10	10 5 27.1	9 55 5.4	α Persei.	Towards Urs. Maj.	1.0	2	No train.
11	10 15 15.5	10 5 53.8	η Urs. Maj.	α Bootis.	0.5	3	
12	10 15 15.5	10 5 53.8	Do.	Do.			
13	10 15 45.4	10 6 23.7	α Persei.	Triangul.	. .	1	Slight train.
14	10 20 44.6	10 11 22.9	β Persei.	Do.	1.0	2	Slight train.
15	10 28 33.3	10 19 11.6	δ Cassiop.	α Cygni.	1.0	1	No train.
16	10 35 7.2	10 25 45.5	Cassiop.	α Urs. Maj	0.5	4	No train.
17	10 38 10.7	10 28 48.0	Triangul.	α Andromed.	2.0	1	Very fine train.
18	10 40 50.3	10 31 28.6	Musca.	α Arietis.	1.0	2	Slight train.
19	10 41 20.2	10 31 58.5	α Urs. Min.	ε Urs. Maj.			
20	10 42 5.1	10 32 43.4	Do.	ρ Urs. Maj.			
21	10 48 49 0	10 39 27.3	Do.	Thro' Urs. Min.			
22	10 50 48.6	10 41 26.9	α Andromed	α Urs. Min.			
23	10 52 28.4	10 43 6.7	ε Cassiop.	Cerv. Island.	1.0	3	Slight train.
24	11 35 56.2	11 26 34.5	α Persei.	α Aurigæ.	0.5	2	No train.
25	11 36 16.2	11 26 54.5	α Androm.	Saturn.			
26	11 38 0.9	11 28 39.2	β Urs. Maj.	α Can. Ven.	1.0	2	Slight train.
27	11 41 20.3	11 31 58.6	α Urs. Maj.	χ Urs. Maj.			
28	11 42 0.2	11 32 38.5	Thro' the three principal stars of Perseus.				
29	11 44 59.7	11 35 38.0	β Urs. Min.	γ Bootis.	10.0	1	Magnificent train
30	11 51 18.7	11 41 57.0	κ Cygni.	α Cygni.			
31	11 53 43.3	11 44 21.6	γ Androm.	Mars.			
32	11 55 57.9	11 46 36.2	ε Cassiop.	α Cephei.	1.0	2	Slight train.
33	11 57 27.7	11 48 6.0	Pleiades.	S. Horizon.	1.0	2	Slight train.
34	12 6 21.2	11 56 59.5	β Urs. Min.	α Cor. Bor.	0.5	3	No train.
35	12 7 46.0	11 58 24.3	λ Urs. Maj.	ε Urs. Maj.	0.5	4	No train.
36	12 15 49.7	12 6 28.0	ε Urs. Maj.	α Bootis.	1.0	3	No train.
37	12 23 52.3	12 14 30.6	Downwards thro' Perseus.				
38	12 24 26.3	12 15 4.6	Mars.	Vertically down.	1.0	2	No train.
39	12 25 35.1	12 16 13.4	β Urs. Min.	Hercules.	0.5	3	No train.
40	12 28 34.6	12 19 12.9	ε Cassiop.	γ Cephei.	1.0	2	Fine train.

Shooting Stars observed at Markree, August 12, 1847.

No.	Calculated M.T. Markree.			From.	To.	Dur.	Mag	Remarks.
	h.	m.	s.					
1	11	5	21.6	21 Can. Ven.	α Bootis.	0.5	2	No train.
2	11	8	57.7	α Draconis.	γ Bootis.	0.3	3	
3	11	10	41.8	α Cassiop.	ρ Cygni.	0.2	5	
4	11	17	17.8	ζ Urs. Maj.	Upward.	0.6	5	No train, rather slow.
5	11	18	21.8	In Camelop.	Downward.	0.2	3	Train.
6	11	27	47.8	Vulpecul.	Pole.	0.4	3	No train.
7	11	30	20.9	ε Urs. Min.	χ Cephei.	1.0	1	No train. Slow.
8	11	31	56.9	Across D Camelop	Head of Urs. Maj.	0.2	4	
9	11	34	38.9	Vertex of Δ in Camelop.	λ Urs. Maj.	0.4	4	
10	11	35	28.9	ε Cassiop.	α Andromed.	1.5	. .	Train lasted 20 s. as bright as Jupiter
11	11	46	18.9	Between α Cephei and α Cygni.	α Lyræ.	0.3	6	No train.
12	11	51	30.0	γ Urs. Min.	γ Bootis.	0.6	5	
13	11	53	1.0	η Draconis.	Thro' Cor. Bor.	0.3	5	
14	12	25	56.1	α Urs. Min.	ζ Urs. Maj.	0.6	1	Seen thro' a cloud.
15	12	26	24.1	θ Bootis.	γ Bootis.	0.2	3	No train.
16	12	27	19.9	In head of Urs. Maj.	. . . . . .	0.7	1	Train seen in a cloud.
17	14	28	9.0	Thro' α and δ Urs. Min.	. . . . . .	0.3	3	No train.
18	14	33	13.0	γ Cephei.	Thro' φ Draconis.	0.4	2	Train.
19	14	38	57.0	Below α Urs. Min.	η Urs. Min.	0.2	3	No train.
20	14	43	46.0	η Persei.	ζ Aurigæ.	0.4	2	
21	14	52	54.1	Head of Urs. Maj.	Vertically down.	0.2	3	
22	14	54	0.1	Near α Lyræ.	Downwards.	0.4	2	
23	14	56	0.1	γ Cephei.	Eastward.	1.5	2	
24	14	56	30.1	Above γ Cephei.	Westward.	0.2	2	
25	15	0	5.1	β Andromed.	Southward.	0.7	1	No train.

The Rev. Dr. Robinson made some remarks on Mr. Cooper's communication, and called the attention of the meeting to observations made by Mr. Cooper on shooting stars seen by him in the daytime.

Sir W. Rowan Hamilton gave an account of some additional applications of Quaternions to Surfaces of the Second Order.

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